

Claims

1. A contact product obtained by a process comprising the step of contacting the following components (a) to (d):

(a) a compound represented by the following formula [1]



(b) a compound represented by the following formula [2]



(c) a compound represented by the following formula [3],



(d) a nonionic surfactant having no active hydrogen, wherein M^1 is a metal atom of the Groups 3 to 12, the Group 14, the Group 15 or Lanthanide Series of the Periodic Table of the Elements; r is a valence of M^1 ; L^1 is a hydrogen atom, a halogen atom, a hydrocarbon group or a hydrocarbonoxy group, and when two or more L^1 's exist, they may be the same or different from one another; each of T^1 and T^2 is a non-metal atom of the Group 15 or 16 in the Periodic Table independently of each other; s is a valence of T^1 ; t is a valence of T^2 ; R^1 is an electron-withdrawing group or an electron-withdrawing group-containing group, and when two or more R^1 's exist, they may be the same or different from one another; and R^2 is a hydrocarbon group, and when two or more R^2 's exist, they may be the same or different from one another.

2. The contact product according to Claim 1, wherein the component (d) is a compound represented by the following formula [4],



wherein R^3 is a hydrocarbon group, and respective R^3 's may be the same or different from one another; Z is a nitrogen atom, an oxygen atom or a sulfur atom; and m is a valence of Z.

3. The contact product according to Claim 2, wherein Z is a nitrogen atom, and at least one R^3 is a hydrocarbon group having from 12 to 100 carbon atoms.

4. The contact product according to Claim 1, wherein each of T^1 and T^2 is a nitrogen atom or an oxygen atom independently of each other.

5. The contact product according to Claim 1, wherein R^1 is a halogenated hydrocarbon group.

6. The contact product according to Claim 1, wherein M^1 is a metal atom of the Groups 5 to 12, the Group 14 or the Group 15 of the Periodic Table of the Elements.

7. The contact product according to Claim 1, wherein each amount of the components (b) and (c) contacted per one mol of the component (a) satisfies the following formula [1], and the amount of the component (d) contact d is from 0.01

to 0.7 mol per one mol of the component ():

$$|r - y - 2z| \leq 0.2 \quad [I],$$

5 wherein r is a valence of M^1 ; y is the amount (mol) of the component (b) contacted per one mol of the component (a); and z is the amount (mol) of the component (c) contacted per one mol of the component (a).

10 8. The contact product according to Claim 1, wherein the process comprises the steps of:

(i) contacting the components (a) to (c) to obtain a contact product, and

15 (ii) contacting said contact product with the component (d).

9. The contact product according to Claim 1, wherein the process comprises the steps of:

20 (i) contacting the components (a), (b) and (d) to obtain a contact product, and

(ii) contacting said contact product with the component (c).

25 10. A catalyst component for addition polymerization comprising a contact product according to Claim 1.

30 11. A catalyst for addition polymerization obtained by a process comprising the step of contacting a catalyst component for addition polymerization according to Claim 10 with a compound of a metal selected from the group consisting of metals

of the Groups 3 to 12 and Lanthanide Series of the Periodic Table.

12. A catalyst for addition polymerization obtained by
5 a process comprising the step of contacting a catalyst component
for addition polymerization according to Claim 10 with a
compound of a metal selected from the group consisting of metals
of the Groups 3 to 12 and Lanthanide Series of the Periodic
Table, and an organoaluminum compound.

10 13. The catalyst for addition polymerization according
to Claim 11 or 12, wherein the compound of a metal selected
from the group consisting of metals of the Groups 3 to 12 and
Lanthanide Series of the Periodic Table is a metallocene
15 compound.

14. A process for producing an addition polymer
comprising the step of polymerizing an addition polymerizable
monomer in the presence of a catalyst for addition
20 polymerization according to Claim 11 or 12.